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April 24, 1995

William F. Caton, Acting Secretary
Federal Communications Commission
1919 M Street, N.W., Room 222
Washington, D.C. 20554
Stop Code 1170

Re: PR Docket No. 93-61

Dear Mr. Caton:

Enclosed for filing on behalf of CellNet Data Systems, Inc. are an original and eleven copies of a Petition for Reconsideration and Clarification in the above-referenced docket.

Please date stamp and return the copy provided for that purpose.

If you have any questions, please do not hesitate to contact the undersigned.

Sincerely,

Wilkinson, Barker, Knauer & Quinn

By: Lawrence J. Movshin

BEFORE THE

Federal Communications Commission

WASHINGTON, DC 20026

IN THE MATTER OF	)	
	)	
AMENDMENT OF PART 90 OF THE COMMISSION'S RULES TO ADOPT REGULATIONS FOR AUTOMATIC VEHICLE MONITORING SYSTEMS	)	PR DOCKET NO. 93-61
	)	

TO: THE COMMISSION

PETITION FOR RECONSIDERATION AND CLARIFICATION

CELLNET DATA SYSTEMS, INC.

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ITS ATTORNEYS

APRIL 24, 1995

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TO: THE COMMISSION

SUMMARY

CELLNET DATA SYSTEMS, INC. ("CELLNET") hereby petitions the Commission for clarification and limited reconsideration of the *Report and Order* (FCC 95-41, released February 6, 1995, Erratum, DA 95-265, released February 17, 1995, Second Erratum, released March 1, 1995) in the above-captioned proceeding. As described in more detail in the accompanying Petition for Reconsideration and Clarification, CELLNET urges the following points:

- The Commission should reclassify Part 15 devices as co-primary in certain parts of the spectrum; under no circumstances should the presumptions of non-interference adopted in the Report and Order by abandoned.
- The decision to permit wideband forward links should be reconsidered, and no such uses should be permitted at this time. At the very least, substantially more detail concerning the types, level and obligations for testing systems using such approaches must be provided in the rules to avoid any potential that any system employing such

techniques will interfere with the operation of Part 15 devices in the 902-928 MHz band.

- Clarification of the permissible uses of LMS systems is needed to assure that these systems do not become substitutes for generally available messaging services. LMS should be restricted to monitoring primarily vehicles and to a limited degree inanimate objects, and interconnected services should be limited to those needed for emergency communications associated with such monitoring.
- The grandfathering provisions should be tailored to accommodate only those licensees who have obtained licenses for legitimate purposes, and not for speculation, by restricting grandfathering protection to those systems actually constructed as of the grandfathering date.

BEFORE THE

Federal Communications Commission

WASHINGTON, DC 20026

IN THE MATTER OF AMENDMENT OF PART 90 OF THE COMMISSION'S RULES TO ADOPT REGULATIONS FOR AUTOMATIC VEHICLE MONITORING SYSTEMS	)	PR DOCKET NO. 93-61

TO: THE COMMISSION

PETITION FOR RECONSIDERATION AND CLARIFICATION

CELLNET DATA SYSTEMS, INC. ("CELLNET")[1], by its attorneys and pursuant to Section 1.429 of the Commission's Rules, hereby petitions the Commission for clarification and limited reconsideration of the *Report and Order* (FCC 95-41, released February 6, 1995, Erratum, DA 95-265, released February 17, 1995, Second Erratum, released March 1, 1995) in the above-captioned proceeding. CELLNET has been an active participant in all phases

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[1] CELLNET, formerly Domestic Automation Company, was formed nearly ten years ago. CELLNET has spent more than six years developing a low-cost, highly efficient automated metering and wireless data monitoring system using spread spectrum technology, primarily targeted to the metering needs of the electric and gas utilities. Since the Commission's 1989 decision in Gen Docket 87-389 to encourage development of the ISM bands for low cost, low-power transmissions by Part 15 devices, CELLNET has concentrated its primary development efforts in the 902-928 MHz band, and the local area network component of its CellNet™ system currently operates on a micro-cellular configuration in that band. CELLNET has participated in all facets of this long-standing proceeding, both in its own right and as an active member of the Part 15 Coalition and its technical subcommittee.

of this proceeding. While CELLNET generally applauds and endorses the compromise reached in this proceeding, three areas require clarification and/or reconsideration to assure the viable and vibrant use of the 902-928 MHz band by both existing and anticipated Part 15 devices and systems and the newer Location and Monitoring Service ("LMS") licensees.

I. INTRODUCTION

Throughout this proceeding, CELLNET and other Part 15 device and system manufacturers and users have maintained several critical positions:

> 1. The 902-928 MHz band has become an invaluable tool for the development of low-cost, highly efficient radio-based solutions under Part 15 to a variety of business and consumer requirements;
>
> 2. Other spectrum exists for meeting most of the identified demands for expanded location and monitoring services that LMS proponents claim are not now being satisfied within the existing Automatic Vehicle Monitoring Service ("AVM") regulations; and
>
> 3. Any changes to the existing AVM rules to provide for expanded utilization (as opposed to making permanent the rules for the existing uses of the AVM service) must also accommodate the co-equal sharing of the band by Part 15 devices operating in accordance with Sections 15.247 and 15.249 of the Rules.

For the most part, the new rules adopted in the *Report and Order* accommodate those positions. Nevertheless, there is a need for limited reconsideration of the grandfathering provisions and clarification of certain other provisions governing the design and use of the new LMS systems to assure that they best achieve

the anticipated objective of protecting legitimate Part 15 uses of the spectrum.

II. **PROTECTION OF PART 15 USES**

CELLNET applauds the Commission's adoption, for the first time, of reasonable threshold standards for determining presumptively when Part 15 devices are not creating "harmful" interference to LMS systems. Appropriately accepting the LMS communities representations that their systems will not typically be subject to interference from Part 15 devices, the FCC has established guidelines by which Part 15 devices may operate without the threat of future restraint should one or more LMS systems believe that they are being interfered with. This is particularly important for systems like those designed and marketed by CELLNET; its wide-spread deployment could make system owners easy targets for a complaint from an affected LMS licensee, notwithstanding the lack of any empirical evidence that the CellNet™ local area network was the source of any interfering signals.

CELLNET continues to believe that the Commission should reclassify Part 15 devices as co-primary in certain parts of the spectrum, much like it has done in creating the unlicensed personal communications service device regulations. To that end, reconsideration of the policy decision to retain secondary status of Part 15 devices in all portions of the 902-928 MHz band is clearly warranted, thereby eliminating the need for the existing

height/power/antenna gain thresholds adopted in the *Report and Order*. The express recognition in the *Report and Order* of the important contribution that Part 15 technologies are making to the public good and the threshold height, output power and antenna gain standards at which Part 15 devices can operate presumptively without causing interference to the LMS service, are excellent first steps toward the ultimate, and appropriate result. These are substantial policy initiatives which are the very least that should be maintained in this proceeding, and indeed carried forward into other similar rulemaking proceedings affecting the use of spectrum by Part 15 devices[2].

III. WIDEBAND FORWARD LINKS

CELLNET is, however, alarmed that the Commission has not given as serious attention to the concerns voiced by the Part 15 community regarding high powered wideband forward links. As CELLNET and others suggested, multilateration systems utilizing high powered forward links to provide messaging within the broadband segment are likely to interfere with Part 15 devices. Moreover because of their wideband characteristics, such LMS systems will be virtually impossible to avoid, thereby severely limiting the use of the band in any areas where such systems are operating.

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[2] While CELLNET shares the view of many members of the Part 15 Coalition that interference from Part 15 devices to any new or existing LMS networks is highly unlikely, the adopted presumptions are a favorable approach which should not be abandoned in any event.

Even the Commission recognized in the *Report and Order* (at paragraphs 76-83), that only a few manufacturers today employ such techniques, although the future threat will obviously be even greater. Contrary to the suggestions of the Part 15 community that such uses should be prohibited or severely restricted, the FCC has chosen in the *Report and Order* to authorize such use; in recognition of the potential for severe interference, however, the FCC has conditioned such use by a licensee on such licensee's performing further testing to establish, "through actual field tests," that the system does not cause unacceptable levels of interference to Part 15 devices.

While CELLNET appreciates the Commission's efforts to reach a Solomon-like compromise to the problem[3], in fact the recognition that further testing is needed to establish the "compatibility" of wideband forward links with Part 15 use of the band merely serves to confirm that the public interest is not served by authorizing such use in the rules at this time. The proponents of such use have failed to demonstrate that wideband forward links are essential to the development of the LMS or that such inefficient spectrum utilization is essential to the success of their technological approaches. If, as they suggest, have

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[3] The concurring statements of Commissioners Quello and Ness and the Dissent of Commissioner Barrett confirm that the timing of such testing, i.e., before the rules were adopted or as a condition to future licensing, was one of the more contentious parts of the *Report and Order*.

consistently suggested, interference will not occur, it was incumbent upon them to demonstrate empirically that this hypothesis was true. Having failed to do so, there is simply no basis for allowing such use in these bands. This decision must be reconsidered.

In the absence of reconsideration, it is incumbent on the Commission to clarify the requirements relating to testing to assure that multilateration systems are not constructed and operate in a fashion that creates harmful interference to other users of this spectrum. Given the importance of such testing to the future uses of this band by a variety of licensees and technologies, CELLNET urges several refinements of the testing requirement to assure that all parties are treated fairly.

First, the Commission must emphasize that this requirement applies to all licensees, whether they were licensed before or after the February 6, 1995 grandfathering date for the rules, generally. Given the threat that wideband forward links pose to Part 15 devices, the population of which is already substantial, there is no reason why the license date for an LMS system should determine whether it can operate with impunity in a way which threatens interference to Part 15 devices. There is no evidence in the record to suggest that any existing licensed AVM systems currently employ wideband forward links; to the contrary, the various ex parte filings of LMS manufacturers suggests that, given the very limited number of manufacturers who intend to

employ such wideband forward links, there is little chance that any existing systems will be seriously prejudiced by adding such a "test before use" condition to already licensed AVM/LMS systems.

Second, the Commission must clarify that the requirement for testing applies to each licensee on an area by area basis. The potential for interference is not a matter susceptible to resolution on the basis of laboratory testing. It will instead be based on a number of factors, including terrain and the distance between the LMS transmitter and the anticipated Part 15 devices. Unless a manufacturer of such LMS systems can demonstrate -- for example by a series of field tests that appropriate simulate all likely conditions of use of such system -- that there is a very low probability of interference under any anticipated conditions, each licensee should be required to demonstrate through actual field tests of the licensee's installed system, that it will not cause interference in its actual operating environment. The rules must be modified to avoid any ambiguity on this point.

Third, the Commission must establish guidelines for what constitutes "unacceptable levels of interference to Part 15 devices" (Section 90.353(d)). As the Commission well knows from the lengthy record in this proceeding, many Part 15 devices and systems developed in this band involve critical data monitoring and data gathering functions which cannot tolerate lengthy

outages by reason of interfering signals from such LMS links. On the other hand, given the "secondary" nature of Part 15 devices (as noted above, a classification with which CELLNET disagrees), it is important that the Commission not leave to the LMS licensee a determination of when the interference created is "unacceptable".

Nor, in CELLNET's view, should the use of the term "unacceptable", rather than the term "harmful" used in other contexts, be given import; creation of interference which makes the use of a Part 15 device system ineffective for its intended purpose should shift the onus of fixing the problem and/or returning the LMS license onto the LMS licensee. And it is just as important for the Commission to establish a mechanism for the Part 15 device owner to complain to and seek relief from the agency as the Commission has done for LMS system operators in the *Report and Order*.

In that regard, CELLNET believes that the Commission should, either on reconsideration or in a further proceeding in this docket, establish some minimal guidelines for the testing of LMS systems and the demonstration of non-interference to Part 15 devices. The Commission has taken on faith the LMS manufacturer's insistence that they will not create interference; while there is no reason to doubt the mutual good faith of the Part 15 and LMS communities, the importance of such tests to each interests' future viability in the 902-928 MHz band suggests that

more than generalized guidance is needed to assure that these important tests are developed in a full and fair manner.

IV. PERMISSIBLE USES

Recognizing the potential that LMS systems would expand well beyond the limited purposes for which the Commission has intended it, Part 15 manufacturers urged several reasonable limits on the operation of LMS systems to assure that this valuable spectrum does not become a substitute home for a variety of PCS-like services. The Commission has addressed these concerns by attempting to limit the uses of LMS systems. However, CELLNET believes that further clarification of the "permissible use" and "interconnection" restrictions is essential to assure that these frequencies are not being used primarily, or even to a substantial degree, for the provision of advanced messaging, paging or other wide area personal communications services that are clearly beyond the scope of LMS.

A. General Restrictions

The Commission has appropriately stated that unfettered interconnection and messaging in the LMS could increase interference to other users of the band, and has generally prohibited non-vehicular monitoring except by multilateration systems "whose primary operations involve the provision of vehicle location services." In order to make sure that this "restriction" is meaningful, the Commission should expressly provide a numerical test for the number of receivers

associated with non-vehicular monitoring (e.g., no more than 20% of all receivers), rather than relying on the ambiguous term "primary" in defining the licensee's business.[4]

B. Messaging Services

Of even greater concern is the ambiguous restriction on "messaging" services to those "necessary to provide accurate, timely and complete status and instructional information relating to the vehicle being located or the occupants of the vehicle." While the Commission has stated in the text of the order that LMS may not "be used for general messaging purposes", the rule allows status and instructional messages related to location and monitoring functions, messaging which may, in practical application be difficult over time to distinguish from the more advanced messaging services being considered for the Narrowband and Broadband PCS services.

The Commission has clearly indicated its intent that such services should not be provided using the LMS system facilities. To achieve this intent, two separate changes can be made in the rules. First, one clarification can be easily made to ameliorate any such concerns; Section 90.353(a)(2) should expressly state that general messaging services are prohibited. Second, to further the Commission's intent in creating this new

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[4] This assures, for example, that a licensee whose "primary" business is vehicle location does not also market five pager-like receivers to each member of a family or to each salesman in a businesses' sales force for each "vehicle" that is being monitored.

service without unduly burdening its proponents, the rules should be modified to clarify that vehicles or objects, but not individuals, may be monitored and located using these systems. By restricting the use of these frequencies to the location and monitoring of vehicles and other inanimate objects the possibility that paging and messaging services will become the primary offerings on these channels can be substantially reduced. By limiting their services to vehicles and other inanimate objects, e.g., cargo, machinery, inventory, jewelry, etc., LMS licensees can continue to monitor, for example, passengers in a vehicle or a messenger in possession of valuable goods, will be appropriate to the service offering.

If, however, these services may be expanded to include use to "monitor and locate" individuals, it will be difficult for the Commission to realistically limit the types of offerings available. The Commission will quickly become embroiled in a variety of enforcement proceedings intended to further delimit the appropriate scope of available services on these channels. Given that the uses of the new LMS systems are being restricted expressly to allow for the use of the frequencies by other authorized licensees and systems, restricting permissible uses to vehicles and inanimate objects appears to be entirely consistent with the purposes for which this compromise action was intended.

C. Interconnection

Similar clarity should be introduced into the interconnection restriction. It is clear that the Commission does not want LMS systems to be used to provide broad scale interconnected services. To that end, the rules restrict real time interconnection to "emergency communications." However, the new rules allow for the provision of store and forward interconnection services to or from the LMS provider relating to "transmissions from [or to] a vehicle or object being monitored," without <u>any</u> on the nature or quantity of the communications being sent using such interconnected services. The problem with this approach is that it creates a loop-hole for LMS providers who want to provide basic store-and-forward paging, dispatch and messaging services[5] to individuals using automated interconnection facilities.

CELLNET does not believe that there is any basis for the use of interconnected services in this band <u>except</u> where the emergency nature of the communication warrants such real-time <u>or</u> store and forward services. Therefore, the interconnection

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[5] One can easily envision a scenario in which messengers or truckers would be dispatched to their next destination via this "location" service using the LMS provider's store-and-forward terminal to store for future delivery the dispatcher's instructions. Such innovative uses clearly exceed the intended purpose for creating this new LMS service, and would lead very quickly to severe overcrowding of this already congested band. And, of course, standard "paging" services utilize "store and forward" technology all the time in providing messaging services to the general public.

provisions of Section 90.353(c) should be reconsidered to limit and interconnection to those permitted to enable emergency communications related to a vehicle or a passenger in a vehicle, with real-time interconnection being further limited to a system dispatch point or entities eligible in the Public Safety or Special Emergency Radio Services.

V. GRANDFATHERING PROVISIONS

Finally, CELLNET urges reconsideration and further restriction of the "grandfathering" provision of the rules. Given the very limited nature of the existing AVM services, and the substantial changes to the rules that have been introduced in the creation of the LMS service, CELLNET believes that the decision to grandfather systems licensed only for AVM that have not even been constructed is entirely too liberal. Indeed, such grandfathering, even with the relatively short modification and construction provisions, encourages and rewards those permittees who may have speculated in a favorable result in this proceeding. Such provisions entitle permittees with virtually no "skin" in the game to the grandfathered status at the expense of those who did not so speculate and who must now otherwise engage in the competitive bidding process to obtain geographically exclusive licenses for the new services.

In CELLNET's view, there is no basis for grandfathering stations that have not even been constructed to the minimal degree defined in Section 90.155, i.e., with the ability to interrogate merely one mobile and receive the response at 3 or

more base stations. Such a minimal requirement at least suggests that the applicant had, as of February 3, 1995, committed some level of capital resources to the design and construction of its AVM system (and was not licensed primarily to gain the benefits that might accrue from the new rules). If, as of that date, not even this minimal construction activity had been completed, the amount of capital investment by such permittee cannot be deemed so significant as to entitle the licensee to any protection vis a vis others who may have an equivalent interest in obtaining licenses for such area.

An accelerated time from for completing construction, to April, 1996, is not enough of a "penalty" to assure that these unconstructed system licenses were applied for with the intent of providing services and not for speculation. In the absence of actual construction activities, all such licenses should be revoked or, at the very least, remain subject to the original construction deadline imposed in the permit. Given the apparent interest in this new service (as evidenced by the significant activity of the LMS industry prior to the issuance of the *Report and Order*), there is no reason why as much of the available spectrum should not be put into the competitive bidding process, except where a licensee has, indeed, invested substantial capital in reliance on the existing rules, i.e.,there is an existing, constructed system already in place.

VI. CONCLUSION

Having participated in this proceeding since its inception, CELLNET certainly appreciates that this proceeding has required a difficult balancing of many significant interests. As a manufacturer who has relied on the Commission's 1989 decisions expanding the use of the 902-928 MHz band for Part 15 services, CELLNET is pleased that a more objective standard of protection for valuable Part 15 uses is beginning to be realized. CELLNET is equally appreciative of the decisions to appropriately proscribe the permissible uses of the LMS systems to those for which no other spectrum is obviously dedicated. CELLNET believes that the areas for which clarification and reconsideration are herein requested will further the Commission's stated objectives for these new rules, and requests prompt review of the rules consistent with the foregoing suggested modifications and clarifications.

Respectfully submitted,
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April 24, 1995